

US Patents 4,914,108, 4,990,518, 4,988,707, 5,227,384, 5,302,601 and 5,486,525 describe 5-substituted [4,5-c]imidazopyridine derivatives useful in the treatment of diseases or disorders mediated by platelet-activating factor. The compounds were found to inhibit ³H-PAF binding to human platelets.

- 5 EP 1132381 describes esters of 2,2-dimethylpropionic acid comprising a benzimidazole structure having an inhibitory activity of elastase.

WO 96/1192 describes compounds of the general formula Ar1-Q-Ar2-Y-R-Z, wherein Z is optionally a [4,5-c]imidazopyridine which are proposed as LTA4 hydrolase inhibitors useful for the treatment of inflammatory diseases mediated by LTB₄ production.

- 10 WO 96/12703 describes heteroarylthioalkyl thiophenolic compounds having 5-lipoxygenase inhibitory activity which are suggested to be useful in the treatment of 5-lipoxygenase mediated conditions.

- Chemical Abstracts acc no. 1987:18435 and Chemical Abstracts acc no. 1983:594812 describe the synthesis of two imidazo[4,5-b] and of imidazo[4,5c]pyridine derivatives substituted with piperazinyl and furanyl groups.
- 15

- EP 1162196 describes fused ring compounds for the use as therapeutic agents for hepatitis C. The fused 5 and 6 membered ring is made up of optionally substituted carbon atoms or nitrogen atoms and optionally one oxygen, sulfur atom or substituted nitrogen atom on the 5 membered ring. WO 95/02597 describes imidazo[4,5c]pyridine derivatives not substituted at the N5 with antiviral activity.
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- In view of their important pharmacological value, there is a need for drugs having antiviral activity, optionally selective activity against viruses belonging to the family of Flaviviridae including hepatitis C virus, and against viruses belonging to the family of Picornaviridae.
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SUMMARY OF THE INVENTION

- In the present invention, new selective anti-viral compounds are being provided. The compounds are imidazo[4,5-c]pyridine derivatives and it has been shown that they possess a broad anti-viral activity. Members of the Flaviviridae and of the Picornaviridae families are being inhibited. The present invention demonstrates that the compounds inhibit the replication of BVDV, HCV and Coxsackie virus. Furthermore, the anti-BVDV activity of the compounds is based on the inhibition of the viral polymerase enzyme of BVDV. Therefore, these
- 30

- The compound is not [5-(4-Fluorobenzyl)-5H-imidazo[4,5-c]pyridin-2-yl]-methylamine (X=CH₂, Y=NR¹¹, wherein R¹¹=methyl, R¹=R²=H, R³=phenyl substituted with 1 R¹⁷ in para, wherein R⁶ is F, R⁴=H, R⁵=H) (as disclosed in EP76530);
- The compound is not 2,6-bis(1,1-dimethylethyl)-4-[[3-(5H-imidazo-[4,5-c]pyridin-5-yl)propyl]thio]-phenol hydrate (X=CH₂-CH₂-CH₂, Y=bond; R¹= hydrogen, R²=H, R³=thiophenyl substituted with 3 R⁶, wherein R⁶=2 branched C₄ alkyl in meta and OH in para) (as disclosed in WO96/12703);
- The compound is not 5-[2-(4-Phenylmethyloxy-phenoxy)-ethyl]-5H-imidazo[4,5-c]pyridine (X=CH₂CH₂, Y=bond, R¹=hydrogen, R²=H, R³=phenoxy substituted with 1 R¹⁷ in para, wherein R¹⁷= benzyl oxy) (as disclosed in WO96/11192);
- The compound is not 5-[3-(4-Phenoxy-phenoxy)-propyl]-5H-imidazo[4,5-c]pyridine (X=CH₂CH₂CH₂, Y=bond, R¹=hydrogen, R²=H, R³=phenoxy substituted with 1 R⁶ in para, wherein R⁶=phenoxy substituted in para with F; R⁴=H) (as disclosed in WO96/11192);
- The compound is not 5-{2-[4-(4-Fluorophenoxy)-phenoxy]-ethyl}-5H-imidazo[4,5-c]pyridine (X=CH₂CH₂, Y=bond, R¹=hydrogen, R²=H, R³=phenoxy substituted with 1 R⁶ in para, wherein R⁶=phenoxy, substituted in para with F; R⁴=H) (as disclosed in WO96/11192);
- The compound is not 5-[3-(4-Phenylmethyl-phenoxy)-propyl]-5H-imidazo[4,5-c]pyridine (X=CH₂CH₂CH₂, Y=bond, R¹=hydrogen, R²=H, R³=phenoxy substituted with 1 R⁶ in para, wherein R⁶=benzyl ;R⁴=H) (as disclosed in WO96/11192);
- The compound is not (1H-Indol-3-yl)-[3-(2-methyl-5H-imidazo[4,5-c]pyridine-5-carbonyl)-phenyl]-methanone (X=-(C=O)- or SO₂, Y= CH₂, R¹=H, R²=H, R³= phenyl substituted with 1 R⁶, wherein R⁶ is C(=O) R¹⁸, wherein R¹⁸ is indole) (as disclosed in US 5,486,525);
- the compound is not 4 or 3-[(2-methyl-5H-imidazo[4,5-c]pyridin-5-yl)methyl]-benzoic acid alkylester or 5-[4 or 3-(alkoxycarbonyl-phenyl)-methyl]-2-methyl-5H-imidazo[4,5-c]pyridine, in particular 4 or 3-[(2-methyl-5H-imidazo[4,5-c]pyridin-5-yl)methyl]-methyl ester (X=CH₂, Y=CH₂, R¹=H, R²=H, R³=phenyl substituted at the para or meta position with 1 R¹⁷, wherein R¹⁷ is (C=O)R¹⁸, wherein R¹⁸=alkoxy) (as disclosed in US 5,486,525)
- the compound is not 5-[(fluorophenyl)methyl]-2-amino-5-H-imidazo[4,5-c]-pyridine (XR³= fluorobenzyl, Y=NR¹¹ with R¹¹=methyl, R¹=H, R², R³, R⁴=H) (as disclosed in US 5,137,896);

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- the compound is not ((5-[4-(Fluorophenyl)methyl]-5-H-imidazo[4,5-c]-pyridine-2-yl)methyl)-carbamaat, methyl ester (XR^3 = fluorobenzyl, $Y = C(=O)R^{12}$ with R^{12} = methyl, $R^1 = H$, $R^2, R^3, R^4 = H$) (as disclosed in US 5,137,896);
- the compound is not 5-(4-Chlorophenylmethyl)-2-(piperidin-1-ylmethyl)-5H-imidazo[4,5-c]pyridine and its dihydrochloride salt (XR^3 = chlorobenzyl, $Y = -CH_2-$, R^1 = piperidinyl) (as disclosed in Justus Liebigs Annalen der Chemie (1971), 747, 158-171);
- the compound is not 5-(4-Chlorophenylmethyl)-2-(4-methyl-piperazin-1-ylmethyl)-5H-imidazo[4,5-c]pyridine (XR^3 = chlorobenzyl, $Y = -CH_2-$, R^1 = piperazinyl, R^6 = methyl) (as disclosed in Journal of the Chemical Society [section B]: Physical Organic (1966), 4, 285-291);

Particularly, the invention relates to a compound according to the general formula (Z) and/or A as described above wherein,

- if Y is a bond and R^1 is an aryl, this aryl is not phenyl para substituted with OH and optionally further substituted with methyl, methoxy, nitro, diethylamino, Cl, Br, or F; or, if Y is a bond and R^1 is an aryl para substituted with OH and optionally further substituted with methyl, methoxy, nitro, diethylamino, Cl, Br, or F, and X is an alkylene, R^3 is not a heterocyclic ring containing N;

and/or

- if Y is a bond or $(CH_2)_{1-6}$, R^1 is H, X is CH_2 and R^3 is phenyl with $1R^{17}$, wherein R^{17} is $C(=O)R^{18}$, then R^{18} is selected from H; OH; C_{1-18} alkyl; C_{2-18} alkenyl; C_{1-18} alkoxy; $NR^{15}R^{16}$; aryl an amino acid residue linked through an amino group thereof; i.e. R^{18} is not a C_{3-10} cycloalkyl or C_{4-10} cycloalkenyl;

and/or

- if Y is a bond or $(CH_2)_{1-6}$, then R^1 is an aryl unsubstituted or substituted with one or more R^6 , heterocyclic ring unsubstituted or substituted with one or more R^6 , C_{3-10} cycloalkyl unsubstituted or substituted with one or more R^6 and C_{4-10} cycloalkenyl unsubstituted or substituted with one or more R^6 ; i.e. YR^1 is not H or C_{1-6} alkyl;

and/or

- if Y is a bond or $(CH_2)_{1-6}$, R^1 is H, and R^3 is a 5 membered heterocyclic ring with one R^{17} , wherein R^{17} is $C(=O)R^{18}$ and R^{18} is $NR^{15}R^{16}$, then R^{15} and R^{16} are not a C_{1-18} alkyl or a cycloalkyl; or

if Y is a bond or $(CH_2)_{1-6}$, and R^1 is H, and R^3 is a 5 membered heterocyclic ring with one R^{17} , wherein R^{17} is $C(=O)R^{18}$ then R^{18} is selected from H; OH; C_{1-18} alkyl; C_{2-18}

cycloalkynyl; 5 or 6 membered heterocyclic, oxyheterocyclic or thioheterocyclic ring; i.e.,
R⁵ is not an aryl, aryloxy or benzyl;

The compounds of the invention optionally exclude those compounds according to the general
5 formula (Z) and/or (A) as described above, wherein YR¹ is not hydrogen, an unsubstituted C₃-
10 cycloalkyl, or a C₁₋₆ alkyl.

The compounds of the invention optionally exclude those compounds according to the general
formula (Z) and/or (A) as described above, wherein YR¹ is not phenyl para substituted with
10 OH.

The compounds of the invention optionally exclude those compounds according to the general
formula (Z) and/or (A) as described above, wherein R¹ is not H, Y is not NR¹¹ with R¹¹ C₁₋₆
alkyl or methyl, and/or YR¹ is not monomethylamino.

15 The compounds of the invention optionally exclude those compounds according to the general
formula (Z) and/or (A) as described above, wherein R¹ is a phenyl substituted with 1R₆, R₆ is
C(=O)R¹⁸ and R¹⁸ is t-butoxy.

20 The compounds of the invention optionally exclude those compounds according to the general
formula (Z) and/or (A) as described above, wherein R¹ is not piperidiny and is not
piperazinyl substituted with methyl.

25 The compounds of this invention optionally exclude those in which XR³ is equivalent to the
substructure -(CH₂)_n-Y-C(O)-N(R₁)(R₂) set forth on column 1, line 49 to column 2 line 38
of US patent 5,302,601 and the comparable disclosure in any member of the patent family of
US patent 5,302,601, which disclosure is herewith expressly incorporated by reference.

30 The compounds of this invention optionally exclude those in which R⁵ contains any of the
substituents designated as « Ar » in WO 00/39127 (incorporated expressly herein by
reference), in particular aryl, aryl phenoxy, or benzyl.

Typically, the compounds of this invention do not include the compounds of example 35 of
US patent 5,302,601, example 6 of US Patent 4,990,518, examples 1 to 5 of US 4,988,707,

examples 3 and/or 11 of WO 96/12703 and/or compounds 340A, 347C, 349C, 351C, 355C and/or 356 C of WO 96/11192 and/or their methylene homologues, the disclosure of which are herewith expressly incorporated by reference.

- 5 Optionally, the compounds of this invention also exclude all methylene homologues of known compounds which are excluded from the scope of this invention.

The compounds of this invention optionally exclude those in which XR3 is equivalent to the substructure $-(CH_2)_n-Het-C(O)-N(R_1)(R_2)$ set forth on column 1, line 41 to column 2 line 24
10 of US patent 4,990,518 and the comparable disclosure in any member of the patent family of US patent 4,990,518, which disclosure is herewith expressly incorporated by reference.

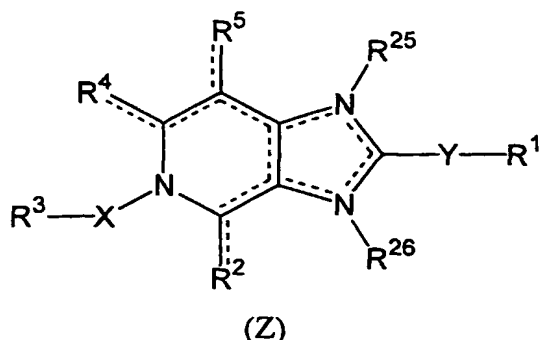
Typically the compounds of this invention do not include the compounds expressly disclosed in EP 76530, EP 1 162 196, EP 1132 381, US 5,486,525, US 5,137,896, US 5,227,384, US
15 4914108, US 5,302,601, US 5,208,242, US 4,990,518, US 4,988,707, DE 4211474, DE 4230464, WO 00/39127, WO 00/40586, WO 00/40583, WO 00/39127, WO 00/20416 and any family member thereof in Chemical Abstracts acc no. 1987:18435 and Chemical Abstracts acc no. 1983:594812 and overlap with the compounds described in the present description, the disclosure of which is herewith expressly incorporated by reference.

20 Typically the compounds of this invention do not include the compounds expressly disclosed in EP 76530, EP 1 162 196, EP 1132 381, US 5,486,525, US 5,137,896, US 5,227,384, US 4914108, WO 00/39127, WO 00/40586, Chemical Abstracts acc no. 1987:18435 and Chemical Abstracts acc no. 1983:594812 and over which the claims of this application are not
25 novel or do not possess an inventive step; the disclosure of these compounds is herewith expressly incorporated by reference.

Typically the compounds of this invention do not include the compounds expressly disclosed in Justus Liebigs Annalen der Chemie (1971), 747, 158-171 or in the Journal of the Chemical
30 Society [section B]: Physical Organic (1966), 4, 285-291 and over which the claims of this application are not novel or do not possess an inventive step; the disclosure of these compounds is herewith expressly incorporated by reference.

CLAIMS

1. Use of a imidazo[4,5-c]pyridine derivative of the formula (Z), or pharmaceutically acceptable salts thereof for the preparation of a medicament for the treatment or prevention of viral infections,



10 wherein:

- the dotted lines represent an optional double bond, provided that no two double bonds are adjacent to one another, and that the dotted lines represent at least 3, optionally 4 double bonds;
- R¹ is selected from hydrogen; aryl unsubstituted or substituted with one or more R⁶, heterocyclic ring unsubstituted or substituted with one or more R⁶, C₃₋₁₀ cycloalkyl unsubstituted or substituted with one or more R⁶ and C₄₋₁₀ cycloalkenyl unsubstituted or substituted with one or more R⁶;
- Y is selected from the group consisting of a single bond, O; S(O)_m; NR¹¹; and a divalent, saturated or unsaturated, substituted or unsubstituted C₁₋₁₀ hydrocarbon group optionally including one or more heteroatoms in the main chain, said heteroatoms being selected from the groups consisting of O, S, and N; such as C₁₋₆ alkylene, C₂₋₆ alkenylene, C₂₋₆ alkynylene, -O(CH₂)₁₋₅-, -(CH₂)₁₋₄-O-(CH₂)₁₋₄-, -S-(CH₂)₁₋₅-, -(CH₂)₁₋₄-S-(CH₂)₁₋₄-, -NR¹¹-(CH₂)₁₋₅-, -(CH₂)₁₋₄-NR¹¹-(CH₂)₁₋₄- and C₃₋₁₀ cycloalkylidene;
- each R² and R⁴ is independently selected from the group consisting of hydrogen C₁₋₁₈ alkyl; C₂₋₁₈ alkenyl; C₂₋₁₈ alkynyl; C₁₋₁₈ alkoxy; C₁₋₁₈ alkylthio; halogen; OH; CN; NO₂; NR⁷R⁸; OCF₃; haloalkyl; C(=O)R⁹; C(=S)R⁹; SH; aryl; aryloxy; arylthio; arylalkyl; C₁₋₁₈ hydroxyalkyl; C₃₋₁₀ cycloalkyl; C₃₋₁₀ cycloalkyloxy; C₃₋₁₀ cycloalkylthio; C₃₋₁₀ cycloalkenyl; C₃₋₁₀ cycloalkynyl; 5 or 6 membered heterocyclic, oxyheterocyclic or

thioheterocyclic ring; or, when one of R^{25} or R^{26} is different from hydrogen, either R^2 or R^4 is selected from ($=O$), ($=S$), and ($=NR^{27}$);

- X is selected from the group consisting of a divalent, saturated or unsaturated, substituted or unsubstituted C_1 - C_{10} hydrocarbon group optionally including one or more heteroatoms in the main chain (provided that the heteroatom is not linked to N of the nucleus), said heteroatoms being selected from the group consisting of O, S, and N; such as C_{1-6} alkylene, (for example $-CH_2-$, $-CH(CH_3)-$, $-CH_2-CH_2-$, $-CH_2-CH_2-CH_2-$, $-CH_2-CH_2-CH_2-CH_2-$, $-(CH_2)_{2-4}-O-(CH_2)_{2-4}-$, $-(CH_2)_{2-4}-S-(CH_2)_{2-4}-$, $-(CH_2)_{2-4}-NR^{10}-(CH_2)_{2-4}-$, C_{3-10} cycloalkylidene, C_{2-6} alkenylene (such as $-CH=CH-CH_2-$), C_{2-6} alkynylene;
- m is any integer from 0 to 2;
- R^3 is selected from the group consisting of aryl; aryloxy; arylthio; aryl- $NR^{10}-$; 5 or 6 membered heterocyclic, oxyheterocyclic or thioheterocyclic ring;; and each of said aryl, aryloxy, arylthio, aryl- $NR^{10}-$, 5 or 6 membered heterocyclic, oxyheterocyclic or thioheterocyclic ring is optionally substituted with one or more R^{17} ; C_{3-10} cycloalkyl, oxycycloalkyl or thiocycloalkyl; C_{4-10} cycloalkenyl with the proviso that the double bond cannot be adjacent to a nitrogen; H with the proviso that if X is an alkylene, an alkenylene or an alkynylene, then X comprises at least 5 carbon atoms;
- R^5 is independently selected from the group consisting of hydrogen; C_{1-18} alkyl; C_{2-18} alkenyl; C_{2-18} alkynyl; C_{1-18} alkoxy; C_{1-18} alkylthio; halogen; OH; CN; NO_2 ; NR^7R^8 ; OCF_3 ; haloalkyl; $C(=O)R^9$; $C(=S)R^9$; SH; aryl; aryloxy; arylthio; arylalkyl; C_{1-18} hydroxyalkyl; C_{3-10} cycloalkyl; C_{3-10} cycloalkyloxy; C_{3-10} cycloalkylthio C_{3-10} cycloalkenyl; C_{3-10} cycloalkynyl; 5 or 6 membered heterocyclic, oxyheterocyclic or thioheterocyclic ring;
- each R^6 and R^{17} is independently selected from the group consisting of hydrogen; C_{1-18} alkyl; C_{2-18} alkenyl; C_{2-18} alkynyl; C_{1-18} alkoxy; C_{1-18} alkylthio; C_{3-10} cycloalkyl, C_{3-10} cycloalkenyl or C_{3-10} cycloalkynyl; halogen; OH; CN; NO_2 ; NR^7R^8 ; OCF_3 ; haloalkyl; $C(=O)R^{18}$; $C(=S)R^{18}$; SH; aryl; aryloxy; arylthio; arylalkyl; arylalkyloxy (optionally a oxybenzyl); arylalkylthio (optionally a benzylthio); 5 or 6 membered heterocyclic, oxyheterocyclic or thioheterocyclic ring; C_{1-18} hydroxyalkyl; and each of said aryl, aryloxy, arylthio, arylalkyl, arylalkyloxy (optionally a oxybenzyl), arylalkylthio (optionally a benzylthio), 5 or 6 membered heterocyclic, oxyheterocyclic or thioheterocyclic ring, C_{1-18} hydroxyalkyl is optionally substituted with 1 or more R^{19} ;
- each R^7 and R^8 is independently selected from the group consisting of H; C_{1-18} alkyl; C_{1-18} alkenyl; aryl; C_{3-10} cycloalkyl; C_{4-10} cycloalkenyl; 5-6 membered heterocyclic ring;

$C(=O)R^{12}$; $C(=S)R^{12}$; an amino acid residue linked through a carboxyl group thereof; alternatively, R^7 and R^8 , together with the nitrogen to which they are attached, combine to form a 5-6 membered heterocyclic ring;

- each R^9 and R^{18} is independently selected from the group consisting of H; OH; C_{1-18} alkyl; C_{2-18} alkenyl; C_{3-10} cycloalkyl; C_{4-10} cycloalkenyl; C_{1-18} alkoxy; $NR^{15}R^{16}$; aryl an amino acid residue linked through an amino group thereof;
- each R^{10} and R^{11} is independently selected from the group the group consisting of H; C_{1-18} alkyl; C_{1-18} alkenyl; C_{3-10} cycloalkyl; C_{4-10} cycloalkenyl; aryl; $C(=O)R^{12}$; 5-6 membered heterocyclin ring; an amino acid residue linked through a carboxyl group thereof;
- R^{12} is independently selected from the group consisting of H; C_{1-18} alkyl; C_{2-18} alkenyl; aryl; C_{3-10} cycloalkyl; C_{4-10} cycloalkenyl; an amino acid residue linked through an amino group thereof;
- each R^{13} and R^{14} is independently selected from the group consisting of H; C_{1-18} alkyl; C_{2-18} alkenyl; aryl; C_{3-10} cycloalkyl; C_{4-10} cycloalkenyl; $C(=O)R^{12}$; $C(=S)R^{12}$; an amino acid residue linked through a carboxyl group thereof;
- each R^{15} and R^{16} is independently selected from the group consisting of H; C_{1-18} alkyl; C_{2-18} alkenyl; C_{2-18} alkynyl; aryl; C_{3-10} cycloalkyl; C_{4-10} cycloalkenyl; an amino acid residue linked through a carboxyl group thereof.
- R^{19} is independently selected from the group consisting of H; C_{1-18} alkyl, preferably C_{1-6} alkyl; C_{2-18} alkenyl; C_{2-18} alkynyl; C_{1-18} alkoxy, preferably C_{1-6} alkoxy; C_{1-18} alkylthio; C_{3-10} cycloalkyl; C_{4-10} cycloalkenyl; C_{4-10} cycloalkynyl; halogen; OH; CN; NO_2 ; $NR^{20}R^{21}$; OCF_3 ; haloalkyl; $C(=O)R^{22}$; $C(=S)R^{22}$; SH; $C(=O)N(C_{1-6} \text{ alkyl})$, $N(H)S(O)(O)(C_{1-6} \text{ alkyl})$; aryl; aryloxy; arylthio; arylalkyl; and each of said aryl, aryloxy, arylthio, arylalkyl substituted with 1 or more halogens, particularly a phenyl substituted with 1-2 halogens; hydroxyalkyl; 5 or 6 membered heterocyclic, oxyheterocyclic or thioheterocyclic ring each unsubstituted or substituted with 1 or more halogens;
- each R^{20} and R^{21} is independently selected from the group consisting of H; C_{1-18} alkyl, preferably C_{1-6} alkyl; C_{2-18} alkenyl; C_{2-18} alkynyl; aryl; C_{3-10} cycloalkyl; C_{4-10} cycloalkenyl; $C(=O)R^{12}$, $C(=S)R^{12}$;
- R^{22} is independently selected from H; OH; C_{1-18} alkyl; C_{2-18} alkenyl; C_{1-18} alkoxy; $NR^{23}R^{24}$; aryl; C_{3-10} cycloalkyl; ; C_{4-10} cycloalkenyl;
- each R^{23} and R^{24} is independently selected from the group the group consisting of H; C_{1-18} alkyl, preferably C_{2-3} alkyl, wherein C_{2-3} alkyl taken together with N of R^{22} can form a

saturated heterocycle, which heterocycle is optionally substituted with OH or aryl or an amino acid residue;

- each R²⁵ or R²⁶, selected from the group consisting of H, C₁₋₁₈ alkyl, preferably C₁₋₄ alkyl; C₃₋₁₀ cycloalkyl, such as C₅₋₁₀ bicycloalkyl; C₃₋₁₀ cycloalkenyl; (C₃₋₈ cycloalkyl)-C₁₋₃ alkyl; aryl, such as phenyl; 5 or 6 membered heterocyclic ring, such as pyridyl; alkylaryl, such as benzyl; and each of said C₁₋₁₈ alkyl, preferably C₁₋₄ alkyl, C₃₋₁₀ cycloalkyl, C₃₋₁₀ cycloalkenyl, (C₃₋₈ cycloalkyl)-C₁₋₃ alkyl, C₅₋₁₀ bicycloalkyl, adamantyl, phenyl, pyridyl and benzyl is optionally substituted with 1-4 of each of C₁₋₆ alkyl, C₁₋₆ alkoxy, halo, CH₂OH, oxybenzyl, and OH; and heterocyclic ring having 3 to 7 carbon atoms, preferably a saturated heterocyclic ring wherein the heteroatoms are S, S(O), or S(O)₂ separated from the imidazopyridyl ring nitrogen atom by at least 2 heterocyclic ring carbon atoms. Provided that either R²⁵ or R²⁶ is hydrogen. Typically R²⁵ or R²⁶ is cyclopentyl or cyclohexyl; provided that if the compound is substituted at R²⁵ or R²⁶, either R² or R⁴ is selected from (=O), (=S), and (=NR²⁷); and
- R²⁷ is selected from the group consisting of H, C₁₋₁₈ alkyl, C₃₋₁₀ cycloalkyl, (C₃₋₁₀ cycloalkyl)-C₁₋₆ alkyl; aryl; arylalkyl, such as benzyl.

2. The use according to claim 1, wherein said viral infection is an infection of a virus belonging to the family of the Flaviviridae.

3. The use according to claim 1, wherein said viral infection is an infection of a hepatitis-C virus.

4. The use according to claim 1, wherein said viral infection is an infection of a virus belonging to the family of the Picornaviridae.

5. The use according to claim 1, wherein said viral infection is an infection of a Coxsackie virus.

6. The use of claim 1, wherein said compound is selected from the group consisting of:
 5-[(4-Bromophenyl)methyl]-2-(2-fluorophenyl)-5*H*-imidazo[4,5-*c*]pyridine (GPJN-52);
 5-[(4-Bromophenyl)methyl]-2-(2-pyridinyl)-5*H*-imidazo[4,5-*c*]pyridine (GPJN-58);
 5-[(4-Bromophenyl)methyl]-2-(1-naphthalenyl)-5*H*-imidazo[4,5-*c*]pyridine (GPJN-62);
 5-[(4-Bromophenyl)methyl]-2-[(phenylthio)methyl]-5*H*-imidazo[4,5-*c*]pyridine (GPJN-83);

5-[(4-Bromophenyl)methyl]-2-[3-(trifluoromethyl)phenyl]-5*H*-imidazo[4,5-*c*]pyridine (GPJN-87);

5-([1,1'-Biphenyl]-4-ylmethyl)-2-(2-fluorophenyl)-5*H*-imidazo[4,5-*c*]pyridine (GPJN-110);

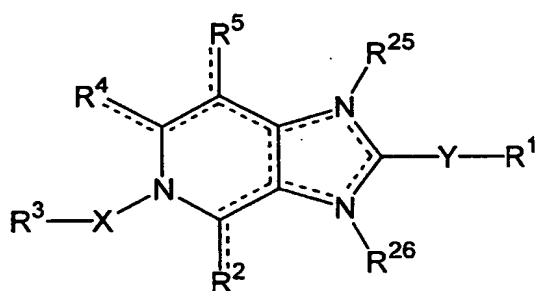
5-[(4-Chlorophenyl)methyl]-2-(2-fluorophenyl)-5*H*-imidazo[4,5-*c*]pyridine (GPJN-112);

5 2-(2-Fluorophenyl)-5-[(4-iodophenyl)methyl]-5*H*-imidazo[4,5-*c*]pyridine (GPJN-113);

5-[[4-(1,1-Dimethylethyl)phenyl]methyl]-2-(2-fluorophenyl)-5*H*-imidazo[4,5-*c*]pyridine (GPJN-114);

7. An imidazo[4,5-*c*]pyridine compound according to formula A:

10



(A)

or an enantiomer or a solvate, or a pharmaceutically acceptable salt thereof, wherein:

- 15 - the dotted lines represent an optional double bond, provided that no two double bonds are adjacent to one another, and that the dotted lines represent at least 3, optionally 4 double bonds;
- R^1 is selected from hydrogen; aryl unsubstituted or substituted with one or more R^6 , heterocyclic ring unsubstituted or substituted with one or more R^6 , C_{3-10} cycloalkyl unsubstituted or substituted with one or more R^6 and C_{4-10} cycloalkenyl unsubstituted or substituted with one or more R^6 ;
- 20 - Y is selected from the group consisting of a single bond, O; $S(O)_m$; NR^{11} ; and a divalent, saturated or unsaturated, substituted or unsubstituted C_{1-10} hydrocarbon group optionally including one or more heteroatoms in the main chain, said heteroatoms being selected from the groups consisting of O, S, and N; such as C_{1-6} alkylene, C_{2-6} alkenylene, C_{2-6} alkynylene, $-O(CH_2)_{1-5}-$, $-(CH_2)_{1-4}-O-(CH_2)_{1-4}-$, $-S-(CH_2)_{1-5}-$, $-(CH_2)_{1-4}-S-(CH_2)_{1-4}-$, $-NR^{11}-(CH_2)_{1-5}-$, $-(CH_2)_{1-4}-NR^{11}-(CH_2)_{1-4}-$ and C_{3-10} cycloalkylidene;
- 25 - each R^2 and R^4 is independently selected from the group consisting of hydrogen C_{1-18} alkyl; C_{2-18} alkenyl; C_{2-18} alkynyl; C_{1-18} alkoxy; C_{1-18} alkylthio; halogen; OH; CN; NO_2 ;

NR⁷R⁸; OCF₃; haloalkyl; C(=O)R⁹; C(=S)R⁹; SH; aryl; aryloxy; arylthio; arylalkyl; C₁₋₁₈ hydroxyalkyl; C₃₋₁₀ cycloalkyl; C₃₋₁₀ cycloalkyloxy; C₃₋₁₀ cycloalkylthio; C₃₋₁₀ cycloalkenyl; C₃₋₁₀ cycloalkynyl; 5 or 6 membered heterocyclic, oxyheterocyclic or thioheterocyclic ring; or, when one of R²⁵ or R²⁶ is different from hydrogen, either R² or R⁴ is selected from (=O), (=S), and (=NR²⁷);

- X is selected from the group consisting of a divalent, saturated or unsaturated, substituted or unsubstituted C₁.C₁₀ hydrocarbon group optionally including one or more heteroatoms in the main chain (provided that the heteroatom is not linked to N of the nucleus), said heteroatoms being selected from the group consisting of O, S, and N; such as C₁₋₆ alkylene, (for example -CH₂-, -CH(CH₃)-, -CH₂-CH₂-, -CH₂-CH₂-CH₂-, -CH₂-CH₂-CH₂-CH₂), -(CH₂)₂₋₄-O-(CH₂)₂₋₄-, -(CH₂)₂₋₄-S-(CH₂)₂₋₄-, -(CH₂)₂₋₄-NR¹⁰-(CH₂)₂₋₄-, C₃₋₁₀ cycloalkylidene, C₂₋₆ alkenylene (such as -CH=CH-CH₂-), C₂₋₆ alkynylene;
- m is any integer from 0 to 2;
- R³ is selected from the group consisting of aryl; aryloxy; arylthio; aryl-NR¹⁰-; 5 or 6 membered heterocyclic, oxyheterocyclic or thioheterocyclic ring;; and each of said aryl, aryloxy, arylthio, aryl-NR¹⁰-, 5 or 6 membered heterocyclic, oxyheterocyclic or thioheterocyclic ring is optionally substituted with one or more R¹⁷; C₃₋₁₀ cycloalkyl, oxycycloalkyl or thiocycloalkyl; C₄₋₁₀ cycloalkenyl with the proviso that the double bond cannot be adjacent to a nitrogen; H with the proviso that if X is an alkylene, an alkenylene or an alkynylene, then X comprises at least 5 carbon atoms;
- R⁵ is independently selected from the group consisting of hydrogen; C₁₋₁₈ alkyl; C₂₋₁₈ alkenyl; C₂₋₁₈ alkynyl; C₁₋₁₈ alkoxy; C₁₋₁₈ alkylthio; halogen; OH; CN; NO₂; NR⁷R⁸; OCF₃; haloalkyl; C(=O)R⁹; C(=S)R⁹; SH; aryl; aryloxy; arylthio; arylalkyl; C₁₋₁₈ hydroxyalkyl; C₃₋₁₀ cycloalkyl; C₃₋₁₀ cycloalkyloxy; C₃₋₁₀ cycloalkylthio C₃₋₁₀ cycloalkenyl; C₃₋₁₀ cycloalkynyl; 5 or 6 membered heterocyclic, oxyheterocyclic or thioheterocyclic ring;
- each R⁶ and R¹⁷ is independently selected from the group consisting of hydrogen; C₁₋₁₈ alkyl; C₂₋₁₈ alkenyl; C₂₋₁₈ alkynyl; C₁₋₁₈ alkoxy; C₁₋₁₈ alkylthio; C₃₋₁₀ cycloalkyl, C₃₋₁₀ cycloalkenyl or C₃₋₁₀ cycloalkynyl; halogen; OH; CN; NO₂; NR⁷R⁸; OCF₃; haloalkyl; C(=O)R¹⁸; C(=S)R¹⁸; SH; aryl; aryloxy; arylthio; arylalkyl; arylalkyloxy (optionally a oxybenzyl); arylalkylthio (optionally a benzylthio); 5 or 6 membered heterocyclic, oxyheterocyclic or thioheterocyclic ring; C₁₋₁₈ hydroxyalkyl; and each of said aryl, aryloxy, arylthio, arylalkyl, arylalkyloxy (optionally a oxybenzyl), arylalkylthio

(optionally a benzylthio), 5 or 6 membered heterocyclic, oxyheterocyclic or thioheterocyclic ring, C₁₋₁₈ hydroxyalkyl is optionally substituted with 1 or more R¹⁹;

- each R⁷ and R⁸ is independently selected from the group consisting of H; C₁₋₁₈ alkyl; C₁₋₁₈ alkenyl; aryl; C₃₋₁₀ cycloalkyl; C₄₋₁₀ cycloalkenyl; 5-6 membered heterocyclic ring; C(=O)R¹²; C(=S)R¹²; an amino acid residue linked through a carboxyl group thereof; alternatively, R⁷ and R⁸, together with the nitrogen to which they are attached, combine to form a 5-6 membered heterocyclic ring;
- each R⁹ and R¹⁸ is independently selected from the group consisting of H; OH; C₁₋₁₈ alkyl; C₂₋₁₈ alkenyl; C₃₋₁₀ cycloalkyl; C₄₋₁₀ cycloalkenyl; C₁₋₁₈ alkoxy; NR¹⁵R¹⁶; aryl an amino acid residue linked through an amino group thereof;
- each R¹⁰ and R¹¹ is independently selected from the group the group consisting of H; C₁₋₁₈ alkyl; C₁₋₁₈ alkenyl; C₃₋₁₀ cycloalkyl; C₄₋₁₀ cycloalkenyl; aryl; C(=O)R¹²; 5-6 membered heterocyclin ring; an amino acid residue linked through a carboxyl group thereof;
- R¹² is independently selected from the group consisting of H; C₁₋₁₈ alkyl; C₂₋₁₈ alkenyl; aryl; C₃₋₁₀ cycloalkyl; C₄₋₁₀ cycloalkenyl; an amino acid residue linked through an amino group thereof;
- each R¹³ and R¹⁴ is independently selected from the group consisting of H; C₁₋₁₈ alkyl; C₂₋₁₈ alkenyl; aryl; C₃₋₁₀ cycloalkyl; C₄₋₁₀ cycloalkenyl; C(=O)R¹²; C(=S)R¹²; an amino acid residue linked through a carboxyl group thereof;
- each R¹⁵ and R¹⁶ is independently selected from the group consisting of H; C₁₋₁₈ alkyl; C₂₋₁₈ alkenyl; C₂₋₁₈ alkynyl; aryl; C₃₋₁₀ cycloalkyl; C₄₋₁₀ cycloalkenyl; an amino acid residue linked through a carboxyl group thereof.
- R¹⁹ is independently selected from the group consisting of H; C₁₋₁₈ alkyl, preferably C₁₋₆ alkyl; C₂₋₁₈ alkenyl; C₂₋₁₈ alkynyl; C₁₋₁₈ alkoxy, preferably C₁₋₆ alkoxy; C₁₋₁₈ alkylthio; C₃₋₁₀ cycloalkyl; C₄₋₁₀ cycloalkenyl; C₄₋₁₀ cycloalkynyl; halogen; OH; CN; NO₂; NR²⁰R²¹; OCF₃; haloalkyl; C(=O)R²²; C(=S)R²²; SH; C(=O)N(C₁₋₆ alkyl), N(H)S(O)(O)(C₁₋₆ alkyl); aryl; aryloxy; arylthio; arylalkyl; and each of said aryl, aryloxy, arylthio, arylalkyl substituted with 1 or more halogens, particularly a phenyl substituted with 1-2 halogens; hydroxyalkyl; 5 or 6 membered heterocyclic, oxyheterocyclic or thioheterocyclic ring each unsubstituted or substituted with 1 or more halogens;
- each R²⁰ and R²¹ is independently selected from the group consisting of H; C₁₋₁₈ alkyl, preferably C₁₋₆ alkyl; C₂₋₁₈ alkenyl; C₂₋₁₈ alkynyl; aryl; C₃₋₁₀ cycloalkyl; C₄₋₁₀ cycloalkenyl; C(=O)R¹², C(=S)R¹²;

- R^{22} is independently selected from H; OH; C_{1-18} alkyl; C_{2-18} alkenyl; C_{1-18} alkoxy; $NR^{23}R^{24}$; aryl; C_{3-10} cycloalkyl; C_{4-10} cycloalkenyl;
- each R^{23} and R^{24} is independently selected from the group consisting of H; C_{1-18} alkyl, preferably C_{2-3} alkyl, wherein C_{2-3} alkyl taken together with N of R^{22} can form a saturated heterocycle, which heterocycle is optionally substituted with OH or aryl or an amino acid residue;
- each R^{25} or R^{26} , selected from the group consisting of H, C_{1-18} alkyl, preferably C_{1-4} alkyl; C_{3-10} cycloalkyl, such as C_{5-10} bicycloalkyl; C_{3-10} cycloalkenyl; (C_{3-8} cycloalkyl)- C_{1-3} alkyl; aryl, such as phenyl; 5 or 6 membered heterocyclic ring, such as pyridyl; alkylaryl, such as benzyl; and each of said C_{1-18} alkyl, preferably C_{1-4} alkyl, C_{3-10} cycloalkyl, C_{3-10} cycloalkenyl, (C_{3-8} cycloalkyl)- C_{1-3} alkyl, C_{5-10} bicycloalkyl, adamantyl, phenyl, pyridyl and benzyl is optionally substituted with 1-4 of each of C_{1-6} alkyl, C_{1-6} alkoxy, halo, CH_2OH , oxybenzyl, and OH; and heterocyclic ring having 3 to 7 carbon atoms, preferably a saturated heterocyclic ring wherein the heteroatoms are S, S(O), or S(O)₂ separated from the imidazopyridyl ring nitrogen atom by at least 2 heterocyclic ring carbon atoms. Provided that either R^{25} or R^{26} is hydrogen. Typically R^{25} or R^{26} is cyclopentyl or cyclohexyl; provided that if the compound comprises R^{25} or R^{26} , either R^2 or R^4 is selected from (=O), (=S), and (=NR²⁷); and
- R^{27} is selected from the group consisting of H, C_{1-18} alkyl, C_{3-10} cycloalkyl, (C_{3-10} cycloalkyl)- C_{1-6} alkyl; aryl; arylalkyl, such as benzyl;

with the proviso that:

- the substituents X, Y, R^1 , R^2 , R^3 , R^4 , R^5 are not a cephalosporin or wherein the substituents X, Y, R^1 , R^2 , R^3 , R^4 , R^5 are not an azabicyclo group, more particularly not 5-thia-1-aza-bicyclo[4.2.0]oct-2-en-8-one;
- the compound is not 5-(2-piperidin-1-yl-ethyl)-2-(4-hydroxyphenyl)-1H-imidazo[4,5-c]pyridin-5-ium bromide;
- the compound is not 4-[5-(2-{4-[Bis-(4-fluorophenyl)-methyl]-piperazin-1-yl}-ethyl)-5H-imidazo[4,5-c]pyridin-2-yl]phenol;
- the compound is not 4-[5-(3-{4-[Bis-(4-fluorophenyl)-methyl]-piperazin-1-yl}-propyl)-5H-imidazo[4,5-c]pyridin-2-yl]phenol;
- the compound is not 5-(phenylmethyl)-5H-imidazo[4,5-c]pyridine wherein phenyl is substituted with CONR¹⁵R¹⁶ and R^{15} is a branched C3 alkyl and R^{16} is phenyl;
- the compound is not 6-(5H-imidazo[4,5-c]pyridin-5-yl-methyl)-N-(1-methylethyl)-N-phenyl-3-pyridinecarboxamide;

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- the compound is not a compound wherein $X = -CH^2-$; $Y = \text{bond}$; $R^1 = \text{hydrogen}$; $R^2 = H$, $R^3 = 5\text{-}6$ membered heterocyclic ring, in particular a pyridinyl or furanyl, substituted with 1 R^{17} wherein $R^{17} = C(=O)R^{18}$, and wherein $R^{18} = NR^{15}R^{16}$ and R^{15} and R^{16} are either methyl, ethyl isopropyl, 2-methyl allyl, cyclopentyl or cyclohexyl;
- 5 - the compound is not a compound wherein $X = -CH^2-$; $Y = \text{bond}$; $R^1 = \text{hydrogen}$; $R^2 = H$, $R^3 = 5\text{-}6$ membered heterocyclic ring, in particular a pyridinyl or furanyl, substituted with 1 R^{17} wherein $R^{17} = C(=O)R^{18}$, and wherein $R^{18} = C_{3-10}$ cycloalkyl or C_{4-10} cycloalkenyl;
- the compound is not 2,6-bis(1,1,-dimethylethyl)-4-[[2-(5H-imidazo-[4,5-c]pyridin-5-yl)ethyl]thio]-phenol hydrate and/or 2,6-bis(1,1,-dimethylethyl)-4-[[2-(5H-imidazo-[4,5-c]pyridin-5-yl)propyl]thio]-phenol hydrate;
- 10 - the compound is not 5-[2-(Biphenyl-4-yloxy)-ethyl]-5H-imidazo[4,5-c]pyridine;
- the compound is not 5-[2-(4-Phenoxy-phenoxy)-ethyl]-5H-imidazo[4,5-c]pyridine;
- the compound is not [5-(4-Fluorobenzyl)-5H-imidazo[4,5-c]pyridin-2-yl]-methylamine;
- the compound is not 2,6-bis(1,1,-dimethylethyl)-4-[[3-(5H-imidazo-[4,5-c]pyridin-5-yl)propyl]thio]-phenol hydrate;
- 15 - the compound is not 5-[2-(4-Phenylmethyloxy-phenoxy)-ethyl]-5H-imidazo[4,5-c]pyridine;
- the compound is not 5-[3-(4-Phenoxy-phenoxy)-propyl]-5H-imidazo[4,5-c]pyridine
- the compound is not 5-{2-[4-(4-Fluorophenoxy)-phenoxy]-ethyl}-5H-imidazo[4,5-c]pyridine;
- 20 - the compound is not 5-[3-(4-Phenylmethyl-phenoxy)-propyl]-5H-imidazo[4,5-c]pyridine;
- the compound is not (1H-Indol-3-yl)-[3-(2-methyl-5H-imidazo[4,5-c]pyridine-5-carbonyl)-phenyl]-methanone;
- the compound is not 4 or 3-[(2-methyl-5H-imidazo[4,5-c]pyridin-5-yl)methyl]-benzoic acid alkylester or 5-[4 or 3-(alkoxycarbonyl-phenyl)-methyl]-2-methyl-5H-imidazo[4,5-c]pyridine, in particular 4 or 3-[(2-methyl-5H-imidazo[4,5-c]pyridin-5-yl)methyl]-methyl ester;
- 25 - the compound is not ((5-[4-(Fluorophenyl)methyl]-5-H-imidazo[4,5-c]-pyridine-2-yl)methyl)-carbamaat, methyl ester;
- 30 - the compound is not 5-(4-Chlorophenylmethyl)-2-(piperidin-1-ylmethyl)-5H-imidazo[4,5-c]pyridine and its dihydrochloride salt;
- the compound is not 5-(4-Chlorophenylmethyl)-2-(4-methyl-piperazin-1-ylmethyl)-5H-imidazo[4,5-c]pyridine;

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8. The compound according to claim 7, wherein:

- R^1 is selected from hydrogen; aryl unsubstituted or substituted with one or more R^6 ,
 5 heterocyclic ring unsubstituted or substituted with one or more R^6 , C_{3-10} cycloalkyl
 unsubstituted or substituted with one or more R^6 and C_{4-10} cycloalkenyl unsubstituted or
 substituted with one or more R^6 ;
- Y is selected from the group consisting of a single bond, O; $S(O)_m$; NR^{11} ; and a divalent,
 10 saturated or unsaturated, substituted or unsubstituted C_{1-10} hydrocarbon group
 optionally including one or more heteroatoms in the main chain, said heteroatoms being
 selected from the groups consisting of O, S, and N; such as C_{1-6} alkylene, C_{2-6} alkenylene,
 C_{2-6} alkynylene, $-O(CH_2)_{1-5}-$, $-(CH_2)_{1-4}-O-(CH_2)_{1-4}-$, $-S-(CH_2)_{1-5}-$, $-(CH_2)_{1-4}-S-(CH_2)_{1-4}-$,
 $NR^{11}-(CH_2)_{1-5}-$, $-(CH_2)_{1-4}-NR^{11}-(CH_2)_{1-4}-$ and C_{3-10} cycloalkylidene;
- each R^2 and R^4 is independently selected from the group consisting of hydrogen C_{1-18}
 15 alkyl; C_{2-18} alkenyl; C_{2-18} alkynyl; C_{1-18} alkoxy; C_{1-18} alkylthio; halogen; OH; CN; NO_2 ;
 NR^7R^8 ; OCF_3 ; haloalkyl; $C(=O)R^9$; $C(=S)R^9$; SH; aryl; aryloxy; arylthio; arylalkyl; C_{1-18}
 hydroxyalkyl; C_{3-10} cycloalkyl; C_{3-10} cycloalkyloxy; C_{3-10} cycloalkylthio; C_{3-10}
 cycloalkenyl; C_{3-10} cycloalkynyl; 5 or 6 membered heterocyclic, oxyheterocyclic or
 thioheterocyclic ring;
- X is selected from the group consisting of a divalent, saturated or unsaturated, substituted
 20 or unsubstituted C_{1-10} hydrocarbon group optionally including one or more heteroatoms
 in the main chain (provided that the heteroatom is not linked to N of the nucleus), said
 heteroatoms being selected from the group consisting of O, S, and N; such as C_{1-6}
 alkylene, (for example $-CH_2-$, $-CH(CH_3)-$, $-CH_2-CH_2-$, $-CH_2-CH_2-CH_2-$, $-CH_2-CH_2-CH_2-$
 25 CH_2), $-(CH_2)_{2-4}-O-(CH_2)_{2-4}-$, $-(CH_2)_{2-4}-S-(CH_2)_{2-4}-$, $-(CH_2)_{2-4}-NR^{10}-(CH_2)_{2-4}-$, C_{3-10}
 cycloalkylidene, C_{2-6} alkenylene (such as $-CH=CH-CH_2-$), C_{2-6} alkynylene;
- m is any integer from 0 to 2;
- R^3 is selected from the group consisting of aryl; aryloxy; arylthio; aryl- NR^{10} -; 5 or 6
 membered heterocyclic, oxyheterocyclic or thioheterocyclic ring;; and each of said aryl,
 30 aryloxy, arylthio, aryl- NR^{10} -, 5 or 6 membered heterocyclic, oxyheterocyclic or
 thioheterocyclic ring is optionally substituted with one or more R^{17} ; C_{3-10} cycloalkyl,
 oxycycloalkyl or thiocycloalkyl; C_{4-10} cycloalkenyl with the proviso that the double bond
 cannot be adjacent to a nitrogen; H with the proviso that if X is an alkylene, an alkenylene
 or an alkynylene, then X comprises at least 5 carbon atoms;

- R^5 is independently selected from the group consisting of hydrogen; C_{1-18} alkyl; C_{2-18} alkenyl; C_{2-18} alkynyl; C_{1-18} alkoxy; C_{1-18} alkylthio; halogen; OH; CN; NO_2 ; NR^7R^8 ; OCF_3 ; haloalkyl; $C(=O)R^9$; $C(=S)R^9$; SH; aryl; aryloxy; arylthio; arylalkyl; C_{1-18} hydroxyalkyl; C_{3-10} cycloalkyl; C_{3-10} cycloalkyloxy; C_{3-10} cycloalkylthio C_{3-10} cycloalkenyl; C_{3-10} cycloalkynyl; 5 or 6 membered heterocyclic, oxyheterocyclic or thioheterocyclic ring;
- each R^6 and R^{17} is independently selected from the group consisting of hydrogen; C_{1-18} alkyl; C_{2-18} alkenyl; C_{2-18} alkynyl; C_{1-18} alkoxy; C_{1-18} alkylthio; C_{3-10} cycloalkyl; C_{3-10} cycloalkenyl or C_{3-10} cycloalkynyl; halogen; OH; CN; NO_2 ; NR^7R^8 ; OCF_3 ; haloalkyl; $C(=O)R^9$; $C(=S)R^9$; SH; aryl; aryloxy; arylthio; arylalkyl; arylalkyloxy (optionally a oxybenzyl); arylalkylthio (optionally a benzylthio); 5 or 6 membered heterocyclic, oxyheterocyclic or thioheterocyclic ring; C_{1-18} hydroxyalkyl; and each of said aryl, aryloxy, arylthio, arylalkyl, arylalkyloxy (optionally a oxybenzyl), arylalkylthio (optionally a benzylthio), 5 or 6 membered heterocyclic, oxyheterocyclic or thioheterocyclic ring, C_{1-18} hydroxyalkyl is optionally substituted with 1 or more R^{19} ;
- each R^7 and R^8 is independently selected from the group consisting of H; C_{1-18} alkyl; C_{1-18} alkenyl; aryl; C_{3-10} cycloalkyl; C_{4-10} cycloalkenyl; 5-6 membered heterocyclic ring; $C(=O)R^{12}$; $C(=S)R^{12}$; an amino acid residue linked through a carboxyl group thereof; alternatively, R^7 and R^8 , together with the nitrogen to which they are attached, combine to form a 5-6 membered heterocyclic ring;
- each R^9 and R^{18} is independently selected from the group consisting of H; OH; C_{1-18} alkyl; C_{2-18} alkenyl; C_{3-10} cycloalkyl; C_{4-10} cycloalkenyl; C_{1-18} alkoxy; $NR^{15}R^{16}$; aryl an amino acid residue linked through an amino group thereof;
- each R^{10} and R^{11} is independently selected from the group the group consisting of H; C_{1-18} alkyl; C_{1-18} alkenyl; C_{3-10} cycloalkyl; C_{4-10} cycloalkenyl; aryl; $C(=O)R^{12}$; 5-6 membered heterocyclin ring; an amino acid residue linked through a carboxyl group thereof;
- R^{12} is independently selected from the group consisting of H; C_{1-18} alkyl; C_{2-18} alkenyl; aryl; C_{3-10} cycloalkyl; C_{4-10} cycloalkenyl; an amino acid residue linked through an amino group thereof;
- each R^{13} and R^{14} is independently selected from the group consisting of H; C_{1-18} alkyl; C_{2-18} alkenyl; aryl; C_{3-10} cycloalkyl; C_{4-10} cycloalkenyl; $C(=O)R^{12}$; $C(=S)R^{12}$; an amino acid residue linked through a carboxyl group thereof;

- each R^{15} and R^{16} is independently selected from the group consisting of H; C_{1-18} alkyl; C_{2-18} alkenyl; C_{2-18} alkynyl; aryl; C_{3-10} cycloalkyl; C_{4-10} cycloalkenyl; an amino acid residue linked through a carboxyl group thereof;
 - R^{19} is independently selected from the group consisting of H; C_{1-18} alkyl, preferably C_{1-6} alkyl; C_{2-18} alkenyl; C_{2-18} alkynyl; C_{1-18} alkoxy, preferably C_{1-6} alkoxy; C_{1-18} arylthio; C_{3-10} cycloalkyl; C_{4-10} cycloalkenyl; C_{4-10} cycloalkynyl; halogen; OH; CN; NO_2 ; $NR^{20}R^{21}$; OCF_3 ; haloalkyl; $C(=O)R^{22}$; $C(=S)R^{22}$; SH; $C(=O)N(C_{1-6} \text{ alkyl})$, $N(H)S(O)(O)(C_{1-6} \text{ alkyl})$; aryl; aryloxy; arylthio; arylalkyl; and each of said aryl, aryloxy, arylthio, arylalkyl substituted with 1 or more halogens, particularly a phenyl substituted with 1-2 halogens; hydroxyalkyl; 5 or 6 membered heterocyclic, oxyheterocyclic or thioheterocyclic ring each unsubstituted or substituted with 1 or more halogens;
 - each R^{20} and R^{21} is independently selected from the group consisting of H; C_{1-18} alkyl, preferably C_{1-6} alkyl; C_{2-18} alkenyl; C_{2-18} alkynyl; aryl; C_{3-10} cycloalkyl; C_{4-10} cycloalkenyl; $C(=O)R^{12}$, $C(=S)R^{12}$;
 - R^{22} is independently selected from H; OH; C_{1-18} alkyl; C_{2-18} alkenyl; C_{1-18} alkoxy; $NR^{23}R^{24}$; aryl; C_{3-10} cycloalkyl; C_{4-10} cycloalkenyl;
 - each R^{23} and R^{24} is independently selected from the group the group consisting of H; C_{1-18} alkyl, preferably C_{2-3} alkyl, wherein C_{2-3} alkyl taken together with N of R^{22} can form a saturated heterocycle, which heterocycle is optionally substituted with OH or aryl or an amino acid residue;
 - R^{25} and R^{26} are hydrogen.
9. The compound according to claim 7 or 8 wherein YR^1 is not hydrogen, an unsubstituted C_{3-10} cycloalkyl, or a C_{1-6} alkyl.
10. The compounds according to any one of claims 7 to 9, wherein YR^1 is not phenyl para substituted with OH.
11. The compound according to any one of claims 7 to 9, wherein R^1 is a naphthenyl.
12. The compound according to any one of claims 7 to 11, wherein R^3 is selected from an aryl unsubstituted or substituted with 1-3 R^6 , wherein at least one R^6 is a halogen or a C_{1-6} alkyl

13. The compound according to claim 7, wherein either R² or R⁴ is O and either R²⁵ or R²⁶ is cyclopentyl or cyclohexyl.

14. The compound according to claim 7, selected from the group consisting of

2-(2,6-Difluorophenyl)-5-[(2,6-difluorophenyl)methyl]-5*H*-imidazo[4,5-*c*]pyridine (GPRTI-8);

5-Benzyl-2-(2,6-difluorophenyl)-5*H*-imidazo[4,5-*c*]pyridine (GPJN-1);

5-[(2,6-Difluorophenyl)methyl]-2-phenyl-5*H*-imidazo[4,5-*c*]pyridine (GPJN-3);

5-Benzyl-2-phenyl-5*H*-imidazo[4,5-*c*]pyridine (GPJN-4);

2-Phenyl-5-(3-phenylpropyl)-5*H*-imidazo[4,5-*c*]pyridine (GPJN-14);

5-[(2-Chlorophenyl)methyl]-2-phenyl-5*H*-imidazo[4,5-*c*]pyridine (GPJN-7);

5-[(3-Chlorophenyl)methyl]-2-phenyl-5*H*-imidazo[4,5-*c*]pyridine (GPJN-8);

5-[(4-Chlorophenyl)methyl]-2-phenyl-5*H*-imidazo[4,5-*c*]pyridine (GPJN-9);

5-[(2-Methoxyphenyl)methyl]-2-phenyl-5*H*-imidazo[4,5-*c*]pyridine (GPJN-11);

5-[(3-Methoxyphenyl)methyl]-2-phenyl-5*H*-imidazo[4,5-*c*]pyridine (GPJN-12);

5-[(4-Methoxyphenyl)methyl]-2-phenyl-5*H*-imidazo[4,5-*c*]pyridine (GPJN-13);

5-[(4-Methylphenyl)methyl]-2-phenyl-5*H*-imidazo[4,5-*c*]pyridine (GPJN-15);

5-[(2-Fluorophenyl)methyl]-2-phenyl-5*H*-imidazo[4,5-*c*]pyridine (GPJN-17);

5-[(3-Fluorophenyl)methyl]-2-phenyl-5*H*-imidazo[4,5-*c*]pyridine (GPJN-18);

5-[(4-Fluorophenyl)methyl]-2-phenyl-5*H*-imidazo[4,5-*c*]pyridine (GPJN-19);

5-[(2-Methylphenyl)methyl]-2-phenyl-5*H*-imidazo[4,5-*c*]pyridine (GPJN-20);

5-[(3-Methylphenyl)methyl]-2-phenyl-5*H*-imidazo[4,5-*c*]pyridine (GPJN-21);

5-[(4-Bromophenyl)methyl]-2-phenyl-5*H*-imidazo[4,5-*c*]pyridine (GPJN-22);

4-[(2-Phenyl-5*H*-imidazo[4,5-*c*]pyridin-5-yl)methyl]-benzonitrile (GPJN-23);

2-Phenyl-5-[[4-(trifluoromethyl)phenyl]methyl]-5*H*-imidazo[4,5-*c*]pyridine (GPJN-24);

5-[(4-Chlorophenyl)methyl]-2-phenyl-5*H*-imidazo[4,5-*c*]pyridine hydrochloride (GPJN-9 x HCl);

5-[(5-Chloro-2-thienyl)methyl]-2-phenyl-5*H*-imidazo[4,5-*c*]pyridine (GPJN-25);

5-(2-Naphthalenylmethyl)-2-phenyl-5*H*-imidazo[4,5-*c*]pyridine (GPJN-26);

2-Phenyl-5-(4-phenylbutyl)-5*H*-imidazo[4,5-*c*]pyridine (GPJN-27);

5-([1,1'-Biphenyl]-4-ylmethyl)-2-phenyl-5*H*-imidazo[4,5-*c*]pyridine (GPJN-32);

2-Phenyl-5-(1-phenylethyl)-5*H*-imidazo[4,5-*c*]pyridine (GPJN-33);

5-(1-Naphthalenylmethyl)-2-phenyl-5*H*-imidazo[4,5-*c*]pyridine (GPJN-36);

- 2-(2,6-Difluorophenyl)-5-[(2,4-difluorophenyl)methyl]-5*H*-imidazo[4,5-*c*]pyridine (GPJN-40);
- 5-[(4-Bromophenyl)methyl]-2-(2-fluorophenyl)-5*H*-imidazo[4,5-*c*]pyridine (GPJN-52);
- 5-[(4-Bromophenyl)methyl]-2-(2-chlorophenyl)-5*H*-imidazo[4,5-*c*]pyridine (GPJN-54);
- 5-[(4-Bromophenyl)methyl]-2-(3-chlorophenyl)-5*H*-imidazo[4,5-*c*]pyridine (GPJN-55);
- 5-[(4-Bromophenyl)methyl]-2-(4-chlorophenyl)-5*H*-imidazo[4,5-*c*]pyridine (GPJN-56);
- 5-[(4-Bromophenyl)methyl]-2-(2-pyridinyl)-5*H*-imidazo[4,5-*c*]pyridine (GPJN-58);
- 5-[(4-Bromophenyl)methyl]-2-(2-thienyl)-5*H*-imidazo[4,5-*c*]pyridine (GPJN-53);
- 5-[(4-Bromophenyl)methyl]-2-(1-naphthalenyl)-5*H*-imidazo[4,5-*c*]pyridine (GPJN-62);
- 5-[(4-Bromophenyl)methyl]-2-(2-naphthalenyl)-5*H*-imidazo[4,5-*c*]pyridine (GPJN-63);
- 5-[(4-Iodophenyl)methyl]-2-phenyl-5*H*-imidazo[4,5-*c*]pyridine (GPJN-68);
- 5-[(4-Bromophenyl)methyl]-2-(3-fluorophenyl)-5*H*-imidazo[4,5-*c*]pyridine (GPJN-50);
- 5-[(4-Bromophenyl)methyl]-2-(3-methylphenyl)-5*H*-imidazo[4,5-*c*]pyridine (GPJN-60);
- 5-[(4-Bromophenyl)methyl]-2-(3-methoxyphenyl)-5*H*-imidazo[4,5-*c*]pyridine (GPJN-64);
- 5-[(4-Bromophenyl)methyl]-2-(3-bromophenyl)-5*H*-imidazo[4,5-*c*]pyridine (GPJN-65);
- 5-[(4-Chlorophenyl)methyl]-2-(3-bromophenyl)-5*H*-imidazo[4,5-*c*]pyridine (GPJN-80);
- 5-[(4-Chlorophenyl)methyl]-2-(3-chlorophenyl)-5*H*-imidazo[4,5-*c*]pyridine;
- 5-(2-Phenoxy-ethyl)-2-phenyl-5*H*-imidazo[4,5-*c*]pyridine (GPJN-73);
- 5-(3-Phenyl-prop-2-en-1-yl)-2-phenyl-5*H*-imidazo[4,5-*c*]pyridine (GPJN-75);
- 2-(3-Bromophenyl)-5-[(4-iodophenyl)methyl]-5*H*-imidazo[4,5-*c*]pyridine (GPJN-79);
- 5-[(4-Bromophenyl)methyl]-2-[(phenylthio)methyl]-5*H*-imidazo[4,5-*c*]pyridine (GPJN-83);
- 5-[(4-Bromophenyl)methyl]-2-[3-(trifluoromethyl)phenyl]-5*H*-imidazo[4,5-*c*]pyridine (GPJN-87);
- 5-([1,1'-Biphenyl]-4-ylmethyl)-2-(2-fluorophenyl)-5*H*-imidazo[4,5-*c*]pyridine (GPJN-110);
- 5-[(4-Chlorophenyl)methyl]-2-(2-fluorophenyl)-5*H*-imidazo[4,5-*c*]pyridine (GPJN-112);
- 2-(2-Fluorophenyl)-5-[(4-iodophenyl)methyl]-5*H*-imidazo[4,5-*c*]pyridine (GPJN-113);
- 5-[[4-(1,1-Dimethylethyl)phenyl]methyl]-2-(2-fluorophenyl)-5*H*-imidazo[4,5-*c*]pyridine (GPJN-114).
15. A composition for separate, combined or sequential use in the treatment or prophylaxis of anti-viral infections, comprising:
- a) one or more compounds according to claim 7, and,
 - b) one or more compounds effective in the treatment or prophylaxis of viral infections, including Flaviviral or Picornaviral enzyme inhibitors,

in proportions such as to provide a synergistic effect in the said treatment of prophylaxis.

16. The composition according to claim 15, wherein said one or more compounds effective in the treatment or prophylaxis of viral infections are interferon alpha or ribavirin.

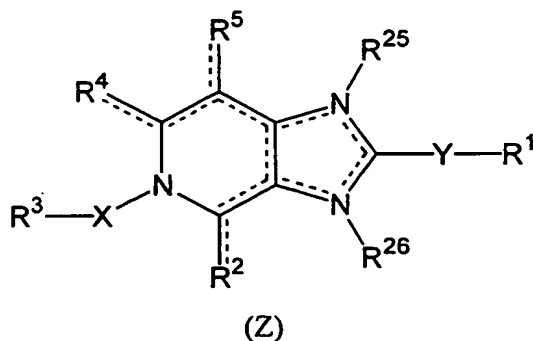
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17. The use of the compounds of any one of claims 7 to 13 for the preparation of a medicament for the treatment of viral infections.

18. A method for preparing the compounds of claim 7 comprising essentially the steps of

- 10 a) reacting a (substituted) 3,4-diaminopyridine (A) is reacted with B (Y-R¹) to give imidazo[4,5-c]pyridines (C);
- b) introducing further substituents (R², R⁴ and/or R⁵ ≠ H) either a) by cyclization of an appropriately substituted 3,4-diaminopyridine (A) or b)) by introduction of the substituent(s) onto the imidazo[4,5-c]pyridine (C);
- 15 c) reacting the imidazo[4,5-c]pyridines (C) with an alkylating agent (D) (R³-X-R⁶) in an appropriate solvent under addition of a base at ambient temperature; optionally, in the case of hydroxy, mercapto or amino substituents in position 4 or 6 of the imidazopyridine I (Z = O, S or NR);
- d) introduction of a further substituent (R²⁵ or R²⁶) at position 1 or 3 of the imidazo[4,5-
- 20 c]pyridine.

19. A method for preventing or treating a viral infections in a subject or patient by administering to the patient in need thereof a therapeutically effective amount of one or more imidazo[4,5-c]pyridine derivatives according to formula (Z):



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wherein:

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- the dotted lines represent an optional double bond, provided that no two double bonds are adjacent to one another, and that the dotted lines represent at least 3, optionally 4 double bonds;
- R^1 is selected from hydrogen; aryl unsubstituted or substituted with one or more R^6 ,
5 heterocyclic ring unsubstituted or substituted with one or more R^6 , C_{3-10} cycloalkyl unsubstituted or substituted with one or more R^6 and C_{4-10} cycloalkenyl unsubstituted or substituted with one or more R^6 ;
- Y is selected from the group consisting of a single bond, O; $S(O)_m$; NR^{11} ; and a divalent, saturated or unsaturated, substituted or unsubstituted C_{1-10} hydrocarbon group
10 optionally including one or more heteroatoms in the main chain, said heteroatoms being selected from the groups consisting of O, S, and N; such as C_{1-6} alkylene, C_{2-6} alkenylene, C_{2-6} alkynylene, $-O(CH_2)_{1-5}-$, $-(CH_2)_{1-4}-O-(CH_2)_{1-4}-$, $-S-(CH_2)_{1-5}-$, $-(CH_2)_{1-4}-S-(CH_2)_{1-4}-$, $-NR^{11}-(CH_2)_{1-5}-$, $-(CH_2)_{1-4}-NR^{11}-(CH_2)_{1-4}-$ and C_{3-10} cycloalkylidene;
- each R^2 and R^4 is independently selected from the group consisting of hydrogen C_{1-18}
15 alkyl; C_{2-18} alkenyl; C_{2-18} alkynyl; C_{1-18} alkoxy; C_{1-18} alkylthio; halogen; OH; CN; NO_2 ; NR^7R^8 ; OCF_3 ; haloalkyl; $C(=O)R^9$; $C(=S)R^9$; SH; aryl; aryloxy; arylthio; arylalkyl; C_{1-18} hydroxyalkyl; C_{3-10} cycloalkyl; C_{3-10} cycloalkyloxy; C_{3-10} cycloalkylthio; C_{3-10} cycloalkenyl; C_{3-10} cycloalkynyl; 5 or 6 membered heterocyclic, oxyheterocyclic or thioheterocyclic ring; or, when one of R^{25} or R^{26} is different from hydrogen, either R^2 or
20 R^4 is selected from $(=O)$, $(=S)$, and $(=NR^{27})$;
- X is selected from the group consisting of a divalent, saturated or unsaturated, substituted or unsubstituted C_{1-10} hydrocarbon group optionally including one or more heteroatoms in the main chain (provided that the heteroatom is not linked to N of the nucleus), said heteroatoms being selected from the group consisting of O, S, and N; such as C_{1-6}
25 alkylene, (for example $-CH_2-$, $-CH(CH_3)-$, $-CH_2-CH_2-$, $-CH_2-CH_2-CH_2-$, $-CH_2-CH_2-CH_2-CH_2-$), $-(CH_2)_{2-4}-O-(CH_2)_{2-4}-$, $-(CH_2)_{2-4}-S-(CH_2)_{2-4}-$, $-(CH_2)_{2-4}-NR^{10}-(CH_2)_{2-4}-$, C_{3-10} cycloalkylidene, C_{2-6} alkenylene (such as $-CH=CH-CH_2-$), C_{2-6} alkynylene;
- m is any integer from 0 to 2;
- R^3 is selected from the group consisting of aryl; aryloxy; arylthio; aryl- $NR^{10}-$; 5 or 6
30 membered heterocyclic, oxyheterocyclic or thioheterocyclic ring; and each of said aryl, aryloxy, arylthio, aryl- $NR^{10}-$, 5 or 6 membered heterocyclic, oxyheterocyclic or thioheterocyclic ring is optionally substituted with one or more R^{17} ; C_{3-10} cycloalkyl, oxycycloalkyl or thiocycloalkyl; C_{4-10} cycloalkenyl with the proviso that the double bond

cannot be adjacent to a nitrogen; H with the proviso that if X is an alkylene, an alkenylene or an alkynylene, then X comprises at least 5 carbon atoms;

- R⁵ is independently selected from the group consisting of hydrogen; C₁₋₁₈ alkyl; C₂₋₁₈ alkenyl; C₂₋₁₈ alkynyl; C₁₋₁₈ alkoxy; C₁₋₁₈ alkylthio; halogen; OH; CN; NO₂; NR⁷R⁸; OCF₃; haloalkyl; C(=O)R⁹; C(=S)R⁹; SH; aryl; aryloxy; arylthio; arylalkyl; C₁₋₁₈ hydroxyalkyl; C₃₋₁₀ cycloalkyl; C₃₋₁₀ cycloalkyloxy; C₃₋₁₀ cycloalkylthio C₃₋₁₀ cycloalkenyl; C₃₋₁₀ cycloalkynyl; 5 or 6 membered heterocyclic, oxyheterocyclic or thioheterocyclic ring;
- each R⁶ and R¹⁷ is independently selected from the group consisting of hydrogen; C₁₋₁₈ alkyl; C₂₋₁₈ alkenyl; C₂₋₁₈ alkynyl; C₁₋₁₈ alkoxy; C₁₋₁₈ alkylthio; C₃₋₁₀ cycloalkyl, C₃₋₁₀ cycloalkenyl or C₃₋₁₀ cycloalkynyl; halogen; OH; CN; NO₂; NR⁷R⁸; OCF₃; haloalkyl; C(=O)R¹⁸; C(=S)R¹⁸; SH; aryl; aryloxy; arylthio; arylalkyl; arylalkyloxy (optionally a oxybenzyl); arylalkylthio (optionally a benzylthio); 5 or 6 membered heterocyclic, oxyheterocyclic or thioheterocyclic ring; C₁₋₁₈ hydroxyalkyl; and each of said aryl, aryloxy, arylthio, arylalkyl, arylalkyloxy (optionally a oxybenzyl), arylalkylthio (optionally a benzylthio), 5 or 6 membered heterocyclic, oxyheterocyclic or thioheterocyclic ring, C₁₋₁₈ hydroxyalkyl is optionally substituted with 1 or more R¹⁹;
- each R⁷ and R⁸ is independently selected from the group consisting of H; C₁₋₁₈ alkyl; C₁₋₁₈ alkenyl; aryl; C₃₋₁₀ cycloalkyl; C₄₋₁₀ cycloalkenyl; 5-6 membered heterocyclic ring; C(=O)R¹²; C(=S) R¹² ; an amino acid residue linked through a carboxyl group thereof; alternatively, R⁷ and R⁸, together with the nitrogen to which they are attached, combine to form a 5-6 membered heterocyclic ring;
- each R⁹ and R¹⁸ is independently selected from the group consisting of H; OH; C₁₋₁₈ alkyl; C₂₋₁₈ alkenyl; C₃₋₁₀ cycloalkyl; C₄₋₁₀ cycloalkenyl; C₁₋₁₈ alkoxy; NR¹⁵R¹⁶; aryl an amino acid residue linked through an amino group thereof;
- each R¹⁰ and R¹¹ is independently selected from the group the group consisting of H; C₁₋₁₈ alkyl; C₁₋₁₈ alkenyl; C₃₋₁₀ cycloalkyl; C₄₋₁₀ cycloalkenyl; aryl; C(=O)R¹²; 5-6 membered heterocyclin ring; an amino acid residue linked through a carboxyl group thereof;
- R¹² is independently selected from the group consisting of H; C₁₋₁₈ alkyl; C₂₋₁₈ alkenyl; aryl; C₃₋₁₀ cycloalkyl; C₄₋₁₀ cycloalkenyl; an amino acid residue linked through an amino group thereof;
- each R¹³ and R¹⁴ is independently selected from the group consisting of H; C₁₋₁₈ alkyl; C₂₋₁₈ alkenyl; aryl; C₃₋₁₀ cycloalkyl; C₄₋₁₀ cycloalkenyl; C(=O)R¹²; C(=S)R¹²; an amino acid residue linked through a carboxyl group thereof;

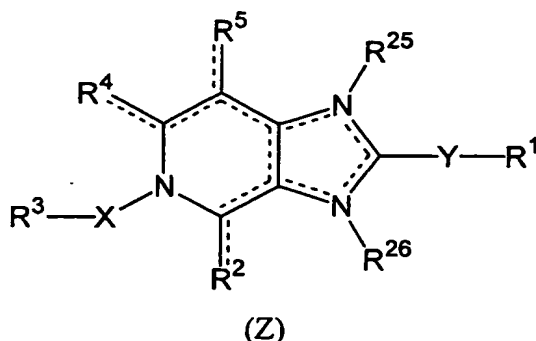
- each R^{15} and R^{16} is independently selected from the group consisting of H; C_{1-18} alkyl; C_{2-18} alkenyl; C_{2-18} alkynyl; aryl; C_{3-10} cycloalkyl; C_{4-10} cycloalkenyl; an amino acid residue linked through a carboxyl group thereof;
 - R^{19} is independently selected from the group consisting of H; C_{1-18} alkyl, preferably C_{1-6} alkyl; C_{2-18} alkenyl; C_{2-18} alkynyl; C_{1-18} alkoxy, preferably C_{1-6} alkoxy; C_{1-18} alkylthio; C_{3-10} cycloalkyl; C_{4-10} cycloalkenyl; C_{4-10} cycloalkynyl; halogen; OH; CN; NO_2 ; $NR^{20}R^{21}$; OCF_3 ; haloalkyl; $C(=O)R^{22}$; $C(=S)R^{22}$; SH; $C(=O)N(C_{1-6} \text{ alkyl})$, $N(H)S(O)(O)(C_{1-6} \text{ alkyl})$; aryl; aryloxy; arylthio; arylalkyl; and each of said aryl, aryloxy, arylthio, arylalkyl substituted with 1 or more halogens, particularly a phenyl substituted with 1-2 halogens; hydroxyalkyl; 5 or 6 membered heterocyclic, oxyheterocyclic or thioheterocyclic ring each unsubstituted or substituted with 1 or more halogens;
 - each R^{20} and R^{21} is independently selected from the group consisting of H; C_{1-18} alkyl, preferably C_{1-6} alkyl; C_{2-18} alkenyl; C_{2-18} alkynyl; aryl; C_{3-10} cycloalkyl; C_{4-10} cycloalkenyl; $C(=O)R^{12}$, $C(=S)R^{12}$;
 - R^{22} is independently selected from H; OH; C_{1-18} alkyl; C_{2-18} alkenyl; C_{1-18} alkoxy; $NR^{23}R^{24}$; aryl; C_{3-10} cycloalkyl; C_{4-10} cycloalkenyl;
 - each R^{23} and R^{24} is independently selected from the group the group consisting of H; C_{1-18} alkyl, preferably C_{2-3} alkyl, wherein C_{2-3} alkyl taken together with N of R^{22} can form a saturated heterocycle, which heterocycle is optionally substituted with OH or aryl or an amino acid residue;
 - each R^{25} or R^{26} , selected from the group consisting of of H, C_{1-18} alkyl, preferably C_{1-4} alkyl; C_{3-10} cycloalkyl, such as C_{5-10} bicycloalkyl; C_{3-10} cycloalkenyl; $(C_{3-8} \text{ cycloalkyl})-C_{1-3} \text{ alkyl}$; aryl, such as phenyl; 5 or 6 membered heterocyclic ring, such as pyridyl; alkylaryl, such as benzyl; and each of said C_{1-18} alkyl, preferably C_{1-4} alkyl, C_{3-10} cycloalkyl, C_{3-10} cycloalkenyl, $(C_{3-8} \text{ cycloalkyl})-C_{1-3} \text{ alkyl}$, C_{5-10} bicycloalkyl, adamantyl, phenyl, pyridyl and benzyl is optionally substituted with 1-4 of each of C_{1-6} alkyl, C_{1-6} alkoxy, halo, CH_2OH , oxybenzyl, and OH; and heterocyclic ring having 3 to 7 carbon atoms, preferably a saturated heterocyclic ring wherein the heteroatoms are S, S(O), or S(O)₂ separated from the imidazopyridyl ring nitrogen atom by at least 2 heterocyclic ring carbon atoms.
- Provided that either R^{25} or R^{26} is hydrogen. Typically R^{25} or R^{26} is cyclopentyl or cyclohexyl; provided that if the compound is substituted at R^{25} or R^{26} , either R^2 or R^4 is selected from $(=O)$, $(=S)$, and $(=NR^{27})$; and
- R^{27} is selected from the group consisting of H, C_{1-18} alkyl, C_{3-10} cycloalkyl, $(C_{3-10} \text{ cycloalkyl})-C_{1-6} \text{ alkyl}$; aryl; arylalkyl, such as benzyl;

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as an active ingredient, optionally in a mixture with at least a pharmaceutically acceptable carrier.

20. A method of screening antiviral compounds which comprises

- 5 a) providing a compounds of the formula (Z)



wherein:

- 10 - the dotted lines represent an optional double bond, provided that no two double bonds are adjacent to one another, and that the dotted lines represent at least 3, optionally 4 double bonds;
- R¹ is selected from hydrogen; aryl unsubstituted or substituted with one or more R⁶, heterocyclic ring unsubstituted or substituted with one or more R⁶, C₃₋₁₀ cycloalkyl unsubstituted or substituted with one or more R⁶ and C₄₋₁₀ cycloalkenyl unsubstituted or substituted with one or more R⁶;
- 15 - Y is selected from the group consisting of a single bond, O; S(O)_m; NR¹¹; and a divalent, saturated or unsaturated, substituted or unsubstituted C₁₋₁₀ hydrocarbon group optionally including one or more heteroatoms in the main chain, said heteroatoms being selected from the groups consisting of O, S, and N; such as C₁₋₆ alkylene, C₂₋₆ alkenylene, C₂₋₆ alkynylene, -O(CH₂)₁₋₅-, -(CH₂)₁₋₄-O-(CH₂)₁₋₄-, -S-(CH₂)₁₋₅-, -(CH₂)₁₋₄-S-(CH₂)₁₋₄-, -NR¹¹-(CH₂)₁₋₅-, -(CH₂)₁₋₄-NR¹¹-(CH₂)₁₋₄- and C₃₋₁₀ cycloalkylidene;
- 20 - each R² and R⁴ is independently selected from the group consisting of hydrogen C₁₋₁₈ alkyl; C₂₋₁₈ alkenyl; C₂₋₁₈ alkynyl; C₁₋₁₈ alkoxy; C₁₋₁₈ alkylthio; halogen; OH; CN; NO₂; NR⁷R⁸; OCF₃; haloalkyl; C(=O)R⁹; C(=S)R⁹; SH; aryl; aryloxy; arylthio; arylalkyl; C₁₋₁₈ hydroxyalkyl; C₃₋₁₀ cycloalkyl; C₃₋₁₀ cycloalkyloxy; C₃₋₁₀ cycloalkylthio; C₃₋₁₀ cycloalkenyl; C₃₋₁₀ cycloalkynyl; 5 or 6 membered heterocyclic, oxyheterocyclic or thioheterocyclic ring; or, when one of R²⁵ or R²⁶ is different from hydrogen, either R² or R⁴ is selected from (=O), (=S), and (=NR²⁷);
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- X is selected from the group consisting of a divalent, saturated or unsaturated, substituted or unsubstituted C₁.C₁₀ hydrocarbon group optionally including one or more heteroatoms in the main chain (provided that the heteroatom is not linked to N of the nucleus), said heteroatoms being selected from the group consisting of O, S, and N; such as C₁₋₆ alkylene, (for example -CH₂-, -CH(CH₃)-, -CH₂-CH₂-, -CH₂-CH₂-CH₂-, -CH₂-CH₂-CH₂-CH₂), -(CH₂)₂₋₄-O-(CH₂)₂₋₄-, -(CH₂)₂₋₄-S-(CH₂)₂₋₄-, -(CH₂)₂₋₄-NR¹⁰-(CH₂)₂₋₄-, C₃₋₁₀ cycloalkylidene, C₂₋₆ alkenylene (such as -CH=CH-CH₂-), C₂₋₆ alkynylene;
- m is any integer from 0 to 2;
- R³ is selected from the group consisting of aryl; aryloxy; arylthio; aryl-NR¹⁰-; 5 or 6 membered heterocyclic, oxyheterocyclic or thioheterocyclic ring;; and each of said aryl, aryloxy, arylthio, aryl-NR¹⁰-, 5 or 6 membered heterocyclic, oxyheterocyclic or thioheterocyclic ring is optionally substituted with one or more R¹⁷; C₃₋₁₀ cycloalkyl, oxycycloalkyl or thiocycloalkyl; C₄₋₁₀ cycloalkenyl with the proviso that the double bond cannot be adjacent to a nitrogen; H with the proviso that if X is an alkylene, an alkenylene or an alkynylene, then X comprises at least 5 carbon atoms;
- R⁵ is independently selected from the group consisting of hydrogen; C₁₋₁₈ alkyl; C₂₋₁₈ alkenyl; C₂₋₁₈ alkynyl; C₁₋₁₈ alkoxy; C₁₋₁₈ alkylthio; halogen; OH; CN; NO₂; NR⁷R⁸; OCF₃; haloalkyl; C(=O)R⁹; C(=S)R⁹; SH; aryl; aryloxy; arylthio; arylalkyl; C₁₋₁₈ hydroxyalkyl; C₃₋₁₀ cycloalkyl; C₃₋₁₀ cycloalkyloxy; C₃₋₁₀ cycloalkylthio C₃₋₁₀ cycloalkenyl; C₃₋₁₀ cycloalkynyl; 5 or 6 membered heterocyclic, oxyheterocyclic or thioheterocyclic ring;
- each R⁶ and R¹⁷ is independently selected from the group consisting of hydrogen; C₁₋₁₈ alkyl; C₂₋₁₈ alkenyl; C₂₋₁₈ alkynyl; C₁₋₁₈ alkoxy; C₁₋₁₈ alkylthio; C₃₋₁₀ cycloalkyl, C₃₋₁₀ cycloalkenyl or C₃₋₁₀ cycloalkynyl; halogen; OH; CN; NO₂; NR⁷R⁸; OCF₃; haloalkyl; C(=O)R¹⁸; C(=S)R¹⁸; SH; aryl; aryloxy; arylthio; arylalkyl; arylalkyloxy (optionally a oxybenzyl); arylalkylthio (optionally a benzylthio); 5 or 6 membered heterocyclic, oxyheterocyclic or thioheterocyclic ring; C₁₋₁₈ hydroxyalkyl; and each of said aryl, aryloxy, arylthio, arylalkyl, arylalkyloxy (optionally a oxybenzyl), arylalkylthio (optionally a benzylthio), 5 or 6 membered heterocyclic, oxyheterocyclic or thioheterocyclic ring, C₁₋₁₈ hydroxyalkyl is optionally substituted with 1 or more R¹⁹;
- each R⁷ and R⁸ is independently selected from the group consisting of H; C₁₋₁₈ alkyl; C₁₋₁₈ alkenyl; aryl; C₃₋₁₀ cycloalkyl; C₄₋₁₀ cycloalkenyl; 5-6 membered heterocyclic ring; C(=O)R¹²; C(=S) R¹² ; an amino acid residue linked through a carboxyl group thereof;

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alternatively, R^7 and R^8 , together with the nitrogen to which they are attached, combine to form a 5-6 membered heterocyclic ring;

- each R^9 and R^{18} is independently selected from the group consisting of H; OH; C_{1-18} alkyl; C_{2-18} alkenyl; C_{3-10} cycloalkyl; C_{4-10} cycloalkenyl; C_{1-18} alkoxy; $NR^{15}R^{16}$; aryl an amino acid residue linked through an amino group thereof;
- each R^{10} and R^{11} is independently selected from the group the group consisting of H; C_{1-18} alkyl; C_{1-18} alkenyl; C_{3-10} cycloalkyl; C_{4-10} cycloalkenyl; aryl; $C(=O)R^{12}$; 5-6 membered heterocyclin ring; an amino acid residue linked through a carboxyl group thereof;
- R^{12} is independently selected from the group consisting of H; C_{1-18} alkyl; C_{2-18} alkenyl; aryl; C_{3-10} cycloalkyl; C_{4-10} cycloalkenyl; an amino acid residue linked through an amino group thereof;
- each R^{13} and R^{14} is independently selected from the group consisting of H; C_{1-18} alkyl; C_{2-18} alkenyl; aryl; C_{3-10} cycloalkyl; C_{4-10} cycloalkenyl; $C(=O)R^{12}$; $C(=S)R^{12}$; an amino acid residue linked through a carboxyl group thereof;
- each R^{15} and R^{16} is independently selected from the group consisting of H; C_{1-18} alkyl; C_{2-18} alkenyl; C_{2-18} alkynyl; aryl; C_{3-10} cycloalkyl; C_{4-10} cycloalkenyl; an amino acid residue linked through a carboxyl group thereof;
- R^{19} is independently selected from the group consisting of H; C_{1-18} alkyl, preferably C_{1-6} alkyl; C_{2-18} alkenyl; C_{2-18} alkynyl; C_{1-18} alkoxy, preferably C_{1-6} alkoxy; C_{1-18} alkylthio; C_{3-10} cycloalkyl; C_{4-10} cycloalkenyl; C_{4-10} cycloalkynyl; halogen; OH; CN; NO_2 ; $NR^{20}R^{21}$; OCF_3 ; haloalkyl; $C(=O)R^{22}$; $C(=S)R^{22}$; SH; $C(=O)N(C_{1-6} \text{ alkyl})$, $N(H)S(O)(O)(C_{1-6} \text{ alkyl})$; aryl; aryloxy; arylthio; arylalkyl; and each of said aryl, aryloxy, arylthio, arylalkyl substituted with 1 or more halogens, particularly a phenyl substituted with 1-2 halogens; hydroxyalkyl; 5 or 6 membered heterocyclic, oxyheterocyclic or thioheterocyclic ring each unsubstituted or substituted with 1 or more halogens;
- each R^{20} and R^{21} is independently selected from the group consisting of H; C_{1-18} alkyl, preferably C_{1-6} alkyl; C_{2-18} alkenyl; C_{2-18} alkynyl; aryl; C_{3-10} cycloalkyl; C_{4-10} cycloalkenyl; $C(=O)R^{12}$, $C(=S)R^{12}$;
- R^{22} is independently selected from H; OH; C_{1-18} alkyl; C_{2-18} alkenyl; C_{1-18} alkoxy; $NR^{23}R^{24}$; aryl; C_{3-10} cycloalkyl; , C_{4-10} cycloalkenyl;
- Each R^{23} and R^{24} is independently selected from the group the group consisting of H; C_{1-18} alkyl, preferably C_{2-3} alkyl, wherein C_{2-3} alkyl taken together with N of R^{22} can form a saturated heterocycle, which heterocycle is optionally substituted with OH or aryl or an amino acid residue;

- each R^{25} or R^{26} , selected from the group consisting of H, C_{1-18} alkyl, preferably C_{1-4} alkyl; C_{3-10} cycloalkyl, such as C_{5-10} bicycloalkyl; C_{3-10} cycloalkenyl; (C_{3-8} cycloalkyl)- C_{1-3} alkyl;; aryl, such as phenyl; 5 or 6 membered heterocyclic ring, such as pyridyl; alkylaryl, such as benzyl; and each of said C_{1-18} alkyl, preferably C_{1-4} alkyl, C_{3-10} cycloalkyl, C_{3-10} cycloalkenyl, (C_{3-8} cycloalkyl)- C_{1-3} alkyl, C_{5-10} bicycloalkyl, adamantyl, phenyl, pyridyl and benzyl is optionally substituted with 1-4 of each of C_{1-6} alkyl, C_{1-6} alkoxy, halo, CH_2OH , oxybenzyl, and OH; and heterocyclic ring having 3 to 7 carbon atoms, preferably a saturated heterocyclic ring wherein the heteroatoms are S, S(O), or S(O)₂ separated from the imidazopyridyl ring nitrogen atom by at least 2 heterocyclic ring carbon atoms.
- 10 Provided that either R^{25} or R^{26} is hydrogen. Typically R^{25} or R^{26} is cyclopentyl or cyclohexyl; provided that if the compound is substituted at R^{25} or R^{26} , either R^2 or R^4 is selected from (=O), (=S), and (=NR²⁷); and
- R^{27} is selected from the group consisting of H, C_{1-18} alkyl, C_{3-10} cycloalkyl, (C_{3-10} cycloalkyl)- C_{1-6} alkyl; aryl; arylalkyl, such as benzyl;

15 and

b) determining the anti-viral activity of said compound.

21. The method of claim 17, wherein said anti-viral activity is determined by the activity of said compound against one or more viruses belonging to the family of the Flaviviridae and/or of the Picornaviridae.

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